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SPACE CONTRIBUTION TO NIE 11-60

1. In the course of the next decade, the USSR can be expected to continue to expand its programs for the control and utilization of space.

2. It must be assumed that the national goal of the Soviet Union will continue to be that of achieving supremacy over all other nations of the world. As a corollary, therefore, we presume the Soviet space program is primarily oriented to aid the USSR in reaching its national goal. All aspects of the political, the military and the economic fields are expected to be continuously reviewed by the Soviets and the program continuously reoriented to achieve maximum progress. The Soviets are expected to make full use of any temporary technical advantage and to make minor adjustments in the program to obtain major political objectives. The Soviets have announced on numerous occasions that one of their primary technological aims is to place man into space, and later to have man explore space to interplanetary distances. We believe that the Soviet statements on the objective of placing man in space to be valid.

3. Their space record to date has, to the West, manifested itself as a well planned program of scientific and technological research with a masterful usage of space achievements for propaganda purposes. The

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USSR has proceeded at a launching rate somewhat less than we had first estimated. Even so, their progress in the adaptation and development of launching vehicles and the increasing sophistication of the instrumentation mechanisms is significant.

4. The Soviet space program philosophy, although still not completely understood, can be rationalized to an extent by interpolating between observed space activity and announced goals. The importance attached by the USSR in exploitation of their space successes for direct and indirect political, military, and of less immediate concern, economic purposes is readily observed. Great weight is given to so called "firsts". A review of the six Soviet space operations reveals little redundancy and each in its way could represent a significant step forward toward the announced ultimate goal of manned space exploration. However, more likely and less discernible, the Soviet program possibly now has or will develop additional major space goals but the priority which the Soviets will ascribe to realizing such goals cannot at this time be determined.

5. The general Soviet philosophy or trends postulated for the future are:

a. Continued selection of space events that will foster and add still more world credence to the belief that the USSR is successfully competing with previously accepted Western superiority not only in science and technology but in economic strength as well.

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b. The acquisition of environmental data and vehicle technological experience that will not only allow the Soviets to proceed stepwise to placing man in space but will allow flexibility in reaching other space goals if they so choose.

c. Undoubtedly study and attempt to exploit any knowledge gained in space that will significantly improve Soviet military potential vis-a-vis the free world.

d. Place man into space at the earliest practicable time.

e. The carrying out at lower priority of a broader scope of scientific experiments and measurements not pre-requisite to manned flight, unless these interfere with significant direct improvement of political, military or economic potential.

6. In the period 1960-70, Soviet manned space exploration beyond the immediate earth environment but still within the cis-lunar region is expected. However, the prospect is low that this could include a successful manned lunar landing with safe return to earth within the period. Prior to extra-terrestrial ventures of man, it will first be necessary to demonstrate successful recovery of manned vehicles from near-earth space trajectories. Early in the period recovery tests from sub-orbital and orbital trajectories can be expected. Contingent upon success of these tests the development of new, large booster engines, and concurrent advances in scientific experimentation with lunar rockets, propulsion staging techniques and attitude

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orienting devices, the Soviets are believed capable of manned circumlunar flight and lunar orbital flight with reasonable chance of safe earth return during the middle of the period.

7. None of the manned space missions considered probable during the period will require the employment of new concepts in propulsion, or life support, but reliable recovery systems and maneuverable space capsules will probable be necessary. During the latter part of the period, however, it is anticipated that the Soviets will engage in the experimental flight testing of nuclear rockets for upper stage use, nuclear powered electrical systems and advanced ecological capsules. Their proof testing logically would be limited initially to the near earth and cis-lunar regions followed by missions to the vicinity of planets (after 1970) for which such systems are pre-requisite. Long lived manned space stations which may appear later in period are largely dependent upon the employment of these systems as well as manned maneuverable earth satellite vehicles capable of re-supply, maintenance and the recovery of space platform personnel. Manned maneuverable earth satellites may appear in the first half of the period.

8. The appearance of space vehicles capable of carrying out direct attack on key Western targets are not envisioned. Early in the period however, U.S. growing mobile nuclear strike forces may force the early development of Soviet reconnaissance satellites as well as vehicles capable of providing weather surveillance, navigation, communications, and early warning services.

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